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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,549

07/21/2003

Peter Jaenecke

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EXAMINER

TRAN, KHANH C

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/622,549

Applicant(s)

JAENECKE ET AL.

Examiner

Khanh Tran

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 3,5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because **the unlabeled rectangular boxes shown in the drawings (FIGS. 2 and 3) should be provided with descriptive text labels**. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4 and 7-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Hunton U.S. Patent 7,095,798 B2.

Regarding claim 1, Hunton invention is directed to communications system that transmits signals that may be composed of plural combined transmit carriers. Each of these carriers may include one or more communication channels. More particularly, the present invention relates to wireless communications systems and signal processing apparatus employed in wireless communications systems. In light of the foregoing, the multi-carrier communication signal corresponds to the claimed pulse train comprising of group of at least two peaks.

FIG. 2 is a block schematic drawing showing signal-peak suppression just prior to D/A conversion in a multiple carrier communication system.

FIG. 3 is a detailed block schematic drawing of the of the signal-peak suppression unit shown FIG. 2. In column 3 lines 50-67, Hunton teaches that peak reduction unit (shown in FIG. 3) provides a peak reduction correction signal based on

Art Unit: 2611

the amount the multi-carrier communication signal exceeds a threshold signal peak limit value. The teachings further comprises splitting the peak reduction correction signal into plural peak reduction correction signals on parallel signal paths and filtering the plural peak reduction correction signals to limit the bandwidth of the peak reduction correction signals. In light of the foregoing, the plural peak reduction correction signals correspond to the claimed scaling factors.

Referring to FIG. 3, and in column 3 lines 55-67, the teachings further combine the filtered peak reduction correction signals and the input multi-carrier communication signal to provide a peak reduced output communication signal band limited in a plurality of separate bands.

Regarding claim 2, referring to column 3 lines 40-50, in another embodiment, Hunton teaches each of the filters provides a filtering operation limiting the correction signal to a frequency band corresponding to a band pass equivalent of one of the plural bands of the multi-carrier input signal. Alternatively, at least one of the filters may provide a filtering operation limiting the correction signal to a frequency band corresponding to plural adjacent bands of the multi-carrier input signal. In light of the aforementioned teachings, the filtering operation can also depend on the plural adjacent bands of the multi-carrier input signal.

Regarding claim 4, as recited in claim 1, the peak reduction unit (shown in FIG. 3) provides a peak reduction correction signal based on the amount the multi-carrier communication signal exceeds a **threshold** signal peak limit value.

Regarding claim 7, in column 2 lines 15-30, Hunton invention provides a multi-carrier communication system, comprising a plurality of communication signal sources each providing a band limited communication signal. A plurality of frequency converters offset the frequency of the plural band limited communication signals and a first combiner combines the plural frequency offset band limited communication signals to form a band limited multi-carrier communication signal. Hunton method applies to CDMA as discussed in claim 1 lines 45-50.

Regarding claim 8, claim is rejected on the same ground as for claim 1 because of similar scope.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunton U.S. Patent 7,095,798 B2.

Regarding claim 9, Hunton does not teach the peak reduction unit implemented on a DSP or a FPGA as set forth in the application claim.

However, in column 2 lines 40-55, because Hunton suggests that the peak reduction calculation circuit employed in the peak reduction unit may comprise an algorithm processor, which calculates the correction signal from the difference between the input communication signal and the signal hard limited to the signal peak limit value, one of ordinary skill in the art would have been motivated to implement the peak reduction calculation circuit on a DSP, which is well known in the art.

Regarding claim 10, because Hunton teachings apply to a transmitter in CDMA environment, one of ordinary skill in the art would have recognized that Hunton teachings can be employed in a CDMA base station.

Allowable Subject Matter

4. Claims 3 and 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

May et al. U.S. Patent 5,835,536 discloses "Method And Apparatus For Reducing Peak-To-Average Requirements In Multi-Tone Communication Circuits".

Long U.S. Patent 6,240,141 B1 discloses "Lower-Complexity Peak-To-Average Reduction Using Intermediate-Result Subset Sign-Inversion For DSL".

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCT

A handwritten signature in black ink, appearing to read 'Khanh Tran', with a stylized flourish at the end.

Khanh Tran
Primary Examiner